



Transmission nanofocus X-ray module

# FXE 190 nano CT



## Uncompromised stability

With its internal cooling, focal spot drift is minimal in the 190 kV nanofocus tube; thus, the time from startup to stable operation is significantly reduced. Combined with the advanced beam stabilization TXI (True X-ray Intensity), the FXE module delivers constant picture contrast, resulting in a flicker-free acquisition.

## Great resolution

The FXE 190 features a 15 W high-power transmission target, making the module a highly resolving X-ray source that enables quick image acquisition at high magnification. The high-resolution target achieves the identification and measurement of features less than 0.6  $\mu\text{m}$ .

## Unlimited lifetime

Our modular design facilitates the quick replacement of critical parts, making the FXE's total cost of ownership among the lowest in its class. You'll never have to worry about running the tube at its limit, as you can always replace the wear-parts; the tube is designed to last well beyond the expected life cycle of any systems it's integrated into.

Benefit from the stability, brightness, and sharpness of our FXE 190 module by combining it with a high-performing X-ray detector to experience superior image quality and in-depth nanoscale analysis.

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x-ray

## The FXE module package

### Nanofocus X-ray tube

High power transmission target, internally cooled active focusing optics, a turbopump, vacuum sensor, and a serviceable beam chamber.

### High voltage power supply

Power supply including a flexible, springloaded HV cable with configurable length.

### Control cabinet

PLC, safety circuitry, roughing pump, integrated cooler, power supply, and focusing optics control.

### Integration tools

GUI for quick operation, including software libraries, and documentation for integration.

### Spare parts

All parts of the FXE module can be replaced. Typical wear parts are filaments, emitter-units, X-ray targets, and O-rings.

## Typical applications

The FXE's high penetration power at 190 kV and instant stability make it ideal for micro-CT applications in electronics, NDT, and pre-clinical applications.

### Electronics inspection

- Soldering joints on circuit boards - PCBA
- Ball grid arrays - BGA
- Integrated circuits - IC
- Bonding wires

Semiconductor packaging and interconnects

Wafer-level chip-scale packages - WLCSP

Microelectromechanical systems - MEMS

Optical components

Battery cell inspection

Cables, conduits, and plastics

Small animal imaging

Soft tissue imaging and scaffolding

Medical implants and devices

### Comet X-ray

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## Specifications

## FXE-190.61

HV range	20 to 190 kV
Max. tube current	1000 $\mu$ A
Max. tube power	80 W
Max. target power	15 W
Target options	High power target (HPT) High resolution target (HRP)
Permanent filtration	Carbon
Beam angle	170°
Min. focus object distance	< 300 $\mu$ m
<b>Focus modes</b>	
Nano, max. resolution*	< 0.9 $\mu$ m
Nano2, max resolution*°	< 0.6 $\mu$ m
Micro, max. resolution*	< 2 $\mu$ m
High power, max. resolution*	< 5 $\mu$ m
Microfocus tube W, H, L **	331, 217, 552 mm
Weight	43 kg
HVPS W, H, L**	204, 476, 612 mm
Weight	53 kg
High voltage cable	R24 Connectors
Diameter	36 mm
Bending radius, static / dynamic	75 / 150 mm
Control Cabinet W, H, L**	800, 1300, 550 mm

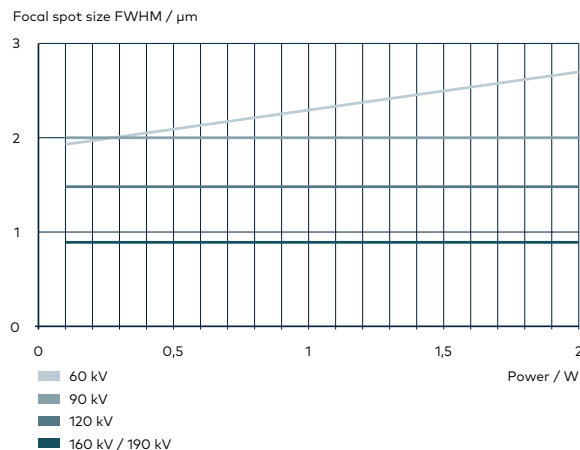
\* JIMA RT RC-02B

\*\* STEP files available on request.

\*° Available with high resolution power target.

### Spot size / focus mode

Three focus modes allow you to adapt the combination of power and resolution to match your inspection task.\*



\* Typical focal spot sizes (full width half maximum) using the High Power Target (HPT) in the Nanofocus mode at various high-voltages as estimated based on best practices - no standards apply. Obtainable resolutions depend highly on system settings and image chain used and cannot be warranted.